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EXAMINER	
DOTE, JANIS L	

ART UNIT	PAPER NUMBER
1756	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	09/679,480	SUZUKI ET AL.	
	Examiner	Art Unit	
	Janis L. Dote	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 54-70 and 79-83 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 54-70 and 79-83 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/8/07</u> . | 6) <input type="checkbox"/> Other: _____ |

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on Jul. 13, 2007 has been entered.

2. The examiner acknowledges the amendments to claims 54, 58, 63, 67, and 82 and the cancellation of claims 71-78 filed on Jul. 13, 2007. Claims 54-70 and 79-83 are pending.

3. The rejections of claims 71-78 and 82 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Apr. 17, 2007, paragraph 5, have been withdrawn in response to the cancellation of claims 71-78 and the amendment to claim 82 filed on Jul. 13, 2007.

4. Applicants are advised that should claim 59 be found allowable, claim 81 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that

they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 54-70 and 79-83 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 54, 58, 63, and 67 and claims dependent thereon are indefinite in the phrase "if Cp₁ and Cp₂ are both of formula (C1), the following R in each (C1) are not combined . . . (i) 4-methylphenyl and (ii) 2-trifluoromethylphenyl" (emphasis added) for lack of unambiguous antecedent basis for the R group 2-trifluoromethylphenyl. Claims 54, 58, 63, and 67 previously recite that "Cp₁ and Cp₂, each, independently, are selected from the group consisting of the . . . formulae (C1)-(C8) with the R group as shown in the Table

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following the respective (C) group." However, the formula (C1) table recites that the R group may be 2-trifluoromethyl, not 2-trifluoromethylphenyl.

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

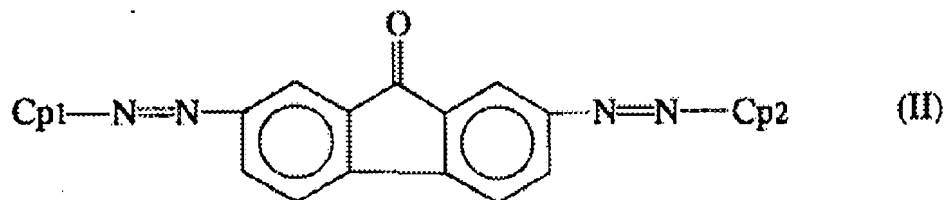
The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 54-70 and 79-83 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

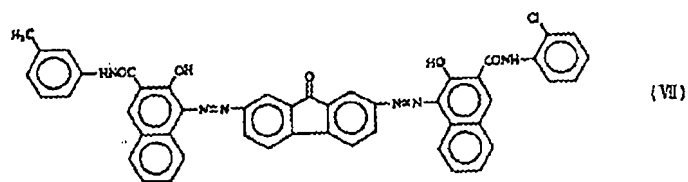
(1) Claims 54, 58, 63, and 67 recite an electrophotographic photoreceptor comprising a charge generation layer that comprises at least one phthalocyanine pigment and at least one asymmetric bisazo pigment of the formula (II), where Cp_1 and Cp_2 each represents a residual group of coupler and differ from one another. The claims recite that Cp_1 and Cp_2 are selected from

the group consisting of formulas (C1)-(C8) with the R group as shown in the table following the respective (C) group, with the proviso that Cp₁ and Cp₂ cannot be the 46 particular combinations recited in instant claims 54, 58, 63, and 67.

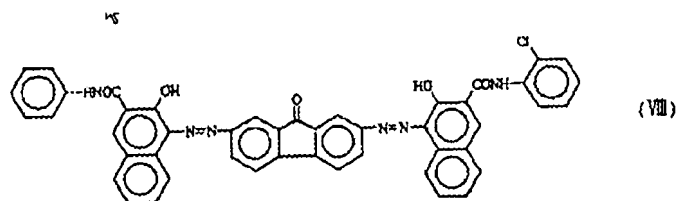
The originally filed specification does not provide an adequate written description of the asymmetric bisazo pigments as recited the instant claims. The originally filed specification at page 6, lines 18-20, discloses the asymmetric bisazo compound of formula (II)



where Cp₁ and Cp₂ are residual groups of a coupler and Cp₁ is different from Cp₂. The originally filed specification at page 11, lines 9-10, discloses that specific examples of Cp₁ and Cp₂ include the groups as shown in Tables 5-11, which list representative examples of residual groups of couplers of formulae (C1) to (C8), respectively. The originally filed specification exemplifies only the two particular asymmetric bisazo pigments of formulas (VII) and (VIII):



and



In formula (VII), Cp_1 and Cp_2 are represented by the chemical formulas C1-12 where R is 3-methylphenyl, and C1-2, where R is 2-chlorophenyl, in Table 1 of the specification. In formula (VIII), Cp_1 and Cp_2 are represented by the chemical formulas C1-1 where R is phenyl, and C1-2, where R is 2-chlorophenyl, in Table 1. The compounds of formulae (VII) and (VIII) comprise only two of 46 excluded combinations of Cp_1 and Cp_2 listed in instant claims 54, 58, 63, and 67.

The originally filed specification does not exclude asymmetric bisazo pigments of formula (II) from comprising the 46 now-excluded combinations of Cp_1 and Cp_2 recited in the instant claims. Nor does the originally filed specification disclose that the use of any of the excluded asymmetric bisazo pigments is detrimental to the photoreceptor. Moreover, there is no evidence in the originally filed specification to show

that said asymmetric bisazo pigments comprising the 46 excluded combinations of Cp₁ and Cp₂ is detrimental to the photoreceptor. As discussed above, the originally filed specification only exemplifies two asymmetric bisazo pigments that comprise two of the 46 particular excluded combinations of Cp₁ and Cp₂. The originally filed specification does not exemplify asymmetric bisazo pigments comprising the remaining 44 particular excluded combinations of Cp₁ and Cp₂. Applicants can only exclude what they possessed. See In re Johnson, 194 USPQ 187 (CCPA 1977). In this instance, the "proviso" limitation excluding the other 44 particular combinations of Cp₁ and Cp₂ was not recognized in the specification as filed. Its use now introduces new concepts, and therefore violates the descriptive requirement of the first paragraph of 35 U.S.C. 112. See Ex parte Grasselli, 231 USPQ 393 (Bd. App. 1983).

(2) Claims 54, 58, 63, and 67 further recite that "if Cp₁ and Cp₂ are both of formula (C1), the following R in each (C1) are not combined . . . (i) 4-methylphenyl and (ii) 2-trifluoromethylphenyl" (emphasis added).

The originally filed specification does not provide an adequate written description of the formula (C1) R group "2-trifluoromethylphenyl" recited in the instant claims. Table 5 at page 14 of the originally filed specification

discloses that the R group in formula (C1) may be "2-trifluoromethyl," C1-8. The originally filed specification does not disclose that the R group may be "2-trifluoromethylphenyl" as recited in the instant claims.

9. Claims 54, 58, 63, and 67 are objected to because of the following informalities:

In claims 54, 58, 63, and 67, the conjunction "and" is missing between the last two combinations listed under "(a)" and "(c)" recited in the instant claims.

In claims 54, 58, 63, and 67, the second listing of the combination "(i) 2-, 3-, or 4-nitrophenyl and (ii) phenyl" under (a) is redundant.

Appropriate correction is required.

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 54, 55, and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 8-029998 (JP'998), as evidenced by applicants' admission at page 31, lines 9-11, of the instant specification (applicants' admission I), combined with Japanese Patent 07-295250 (JP'250), and Schaffert,

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Electrophotography, p. 50 and Fig. 4a, and US 4,468,110

(Tanigawa).

See the DERWENT machine-assisted translations of JP'998 and JP'250, and the Japanese Patent Office (JPO) machine-assisted translation of JP'998 for cites.

JP'998 discloses an electrophotographic photoreceptor comprising a conductive aluminum drum, an intermediate layer, a charge generation layer, and a charge transport layer. The charge generation layer comprises 3 parts by weight of a π -form metal-free phthalocyanine pigment and 3.5 parts by weight of the asymmetric bisazo pigment (I-30). DERWENT translation, Table 1-(7) at page 19, compound (I)-30; paragraphs 0035, 0036, 0042, and 0043; and example 10 in paragraph 0047; and JPO translation, paragraph 0035, lines 4-5. The weight ratio of phthalocyanine pigment to bisazo pigment is 3:3.5, which is within the range of 1:5 to 5:1 recited in instant claim 54. The intermediate layer has a layer thickness of 0.1 μm , which meets the layer thickness range of "up to 10 μm , excluding 0" recited in instant claim 80. See the JPO translation, paragraph 0035, lines 4-5. (Note that the DERWENT translation of paragraph 0035 is missing the text in lines 4-5 of the JPO translation.) JP'998 also discloses that the asymmetric bisazo pigment can equally be any of the asymmetric bisazo pigments shown in Tables 1-(1)

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to 1-(11), such as formula (I)-8 in Table 1-(2) at page 14, which meets the limitations of formulas (II), (C1), and (C2) recited in instant claim 54, where (C1) and (C2) are represented by the chemical formulas C2-15 where R is 3-methoxyphenyl, and C2-11, where R is 2-methylphenyl, in the (C2) table recited in instant claim 54. See the DERWENT translation, paragraph 0014. According to JP'998, its photoreceptor has high spectral sensitivity in the visible light to the near infrared region. DERWENT translation, paragraph 0004.

JP'998 does not exemplify a photoreceptor comprising an intermediate layer comprising titanium oxide as recited in the instant claims. However, JP'998 discloses that a fine-powder pigment of a metallic oxide, such as titanium oxide, may be added to the binder resin of its intermediate layer to prevent the occurrence of moire and to reduce the residual electric potential of the photoreceptor. DERWENT translation, paragraph 0030. These are the same benefits sought by applicants. See the instant specification, page 31, lines 9-11.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'998, to use the asymmetric bisazo pigment (I)-8 as the asymmetric bisazo pigment in the charge generation layer and to add the metal pigment titanium oxide to the intermediate layer in the photoreceptor

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disclosed by JP'998. That person would have had a reasonable expectation of successfully obtaining an electrophotographic photoreceptor that has high spectral sensitivity in the visible light to the near infrared region and that prevents the occurrence of moire and exhibits a reduction in residual electric potential.

JP'998 also does not disclose that the charge transport layer comprises a sulfur-containing compound as recited in the instant claims. However, JP'998 discloses that the charge transport layer can comprise an antioxidant. DERWENT translation, paragraph 0027.

JP'250 discloses sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), and (S-3) recited in the instant claims. JP'250 discloses that said sulfur-containing compounds can be used as antioxidants in charge transport layers of photoreceptors. DERWENT translation, paragraph 0007, compounds (I-1) to (I-4) at paragraph 0026, compounds (II-1) to (II-3) at paragraph 0028. JP'250 exemplifies a charge transport layer comprising 1.5 parts by weight of the sulfur-containing antioxidant per 100 parts by weight of the charge transport material. The amount of 1.5 parts by weight was determined from the information provided in the DERWENT translation, paragraph 0050. The amount of

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1.5 parts by weight per 100 parts by weight of the charge transport material is within the range of "0.1 to 5 parts by weight . . . based on 100 parts by weight" of the charge transport material recited in instant claim 54. JP'250 discloses that said sulfur-containing compounds prevent the deterioration of the photoreceptor due to ozone in the ambient air or due to strong light irradiation. The photoreceptor is said to have improved potential stability over long periods of time. DERWENT translation, paragraphs 0003, 0006, and 0007, and paragraph 0054, lines 1-4. JP'250 further teaches that its sulfur-containing antioxidants provide photoreceptors with improved stability of electrification and sensitivity over long periods of time compared to known hindered phenol antioxidants. DERWENT translation, Table 1, example 1 and comparative examples 3 and 4, and paragraph 0054, lines 14-18.

It would have been obvious for a person having ordinary skill in the art to use JP'250's sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), or (S-3) recited in the instant claims, in an amount of 1.5 parts by weight per 100 parts by weight of the charge transport material in the charge transport layer, as the antioxidant in the photoreceptor rendered obvious over the teachings of JP'998. That person would have had a reasonable

expectation of successfully obtaining a photoreceptor that has improved potential stability over long periods of time and that provides stable toner images after many repeated copies.

The recitation, "the photoreceptor is suitable for a reverse developing method in an electrophotographic image forming apparatus which comprises a contact charger," in claim 54 is merely a statement of intended use that does not distinguish the photoreceptor rendered obvious over the combined teachings of the cited prior art. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. It is well known in the electrophotographic arts that that the "production of positive prints from line negatives requires only a change of the xerographic developing material." See Schaffert, p. 50, section 2.6.1, lines 1 and 2. According to Schaffert, "[w]hen a xerographic plate sensitized with positive charges is exposed to a line negative, the image areas are discharged and the nonimage areas remain charged . . . because of the fringe field effect, negative charges will be induced on the surface of the xerographic plate near the edges of the image areas. Such an

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area is represented at E in Fig. 4a. Now, if the plate is developed with an electropositive developer, the positively charged toner will be attracted to the induced negative charges, and a photographically positive image is developed." Schaffert further teaches that in the case of xerographic plates requiring negative sensitization, an electronegative developer would be used. See Schaffert, page 50, section 2.6.1, lines 4-13, and Fig. 4a. According to Tanigawa, "in reversal development, there is used a developer charged with the same polarity as that of the latent image background portion of the photosensitive medium. The developer is applied to the latent image portion where the charge on the surface of the photosensitive medium has been decayed by the laser beam exposure." Tanigawa, col. 1, lines 49-55. As discussed above, the photoreceptor rendered obvious over the combined teachings of the cited prior art meets the photoreceptor limitations recited in the instant claims. Thus, on the present record, the intended use recited in instant claim 54 does not appear to result in a compositional or structural difference between the photoreceptor recited in the instant claims and the photoreceptor rendered obvious over the combined teachings of the cited prior art.

12. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 54 above, further combined with additional teachings in JP'998. See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

The claim is rejected for the reasons discussed in the office action mailed on Apr. 17, 2007, paragraph 8, which are incorporated herein by reference.

13. Claims 58-60, 63, 64, 67, 68, and 81-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claims 54 and 55 above, further combined with US 5,047,803 (Kanoto). See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 11 above, which is incorporated herein by reference.

JP'998 does not disclose that the electrophotographic photoreceptor can be used in a process cartridge or in an apparatus as recited in the instant claims. Nor does JP'998

disclose that its photoreceptor can be used in the image forming method recited in the instant claims.

However, the use of process cartridges in electrophotographic apparatuses is well known in the art.

Kanoto discloses that process cartridges in electrophotographic apparatuses are well known in the art.

Kanoto discloses that process cartridges comprising an electrophotographic photoreceptor and at least one processing means, such as a contact roller charger or a corona charger, a developing device, a cleaner, and other elements are widely used in the field of image forming apparatuses that are small and that do not require maintenance. Col. 1, lines 18-28, and col. 3, lines 36-38. Kanoto discloses an image forming apparatus comprising a process cartridge that is easily dismounted from the main assembly of the image forming apparatus. Col. 1, lines 60-63. Kanoto shows an example of such an apparatus in Fig. 1. The apparatus comprises a process cartridge 100, a laser beam scanner 7 as the image-wise exposure source, an image transfer roller 8 to transfer the toned image from the photoreceptor to a receiving member, and a pair of fixing rollers 15a and 15b to fix the toned image on the receiving member. The process cartridge 100 comprises a photosensitive drum 1 (i.e., photoreceptor), a charging

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roller 2, a developing device 3, and a cleaning device 4 to remove residual toner or other contaminants from the photoreceptor after development. See Fig. 1, and col. 2, line 37, to col. 4, line 38. Charging roller 2 meets the contact charger recited in instant claims 59, 81, and 82. Kanoto discloses that the charging roller 2, the developing device 3, or the cleaning device 4 need not be contained in the process cartridge 100, but can be part of the image forming apparatus. Col. 2, lines 57-60. Kanoto further discloses that the developing device 3 in the process cartridge or image forming apparatus can reverse develop the electrostatic latent image formed on the photoreceptor with a developer having the same polarity as the charge remaining on the photoreceptor. Col. 3, lines 57-61. Said developing device meets the developing device recited in instant claims 58 and 63. Kanoto further discloses that its imaging apparatus performs an image forming process that meets the process steps recited in instant claims 67 and 83, but for the step of providing the particular photoreceptor. Kanoto, col. 3, line 49, to col. 4, line 38.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kanoto, to incorporate the electrophotographic photoreceptor rendered obvious over the combined teachings of JP'998, JP'250,

Schaffert, and Tanigawa in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully obtaining a reversal development imaging method and an image forming apparatus comprising an easily detachable process cartridge having the benefits of being small and free from maintenance, each of which provides stable toner images after many repeated runs as disclosed by JP'250.

14. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 55 above, further combined with US 4,507,374 (Kakuta), as evidenced by applicants' admission at page 21, lines 11-19, of the instant specification (applicants' admission II), and DERWENT abstract Acc. No. 1983-816039. See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

The claim is rejected for the reasons discussed in the office action mailed on Apr. 17, 2007, paragraph 10, which are incorporated herein by reference.

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15. Claims 61, 65, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'998, as evidenced by applicants' admission I, combined with JP'250, Schaffert, Tanigawa, and Kanoto, as applied to claims 60, 64, and 68 above, further combined with Kakuta, as evidenced by applicants' admission II and DERWENT abstract Acc. No. 1983-816039. See the DERWENT translations of JP'998 and JP'250, and the JPO translation of JP'998 for cites.

The claims are rejected for the reasons discussed in the office action mailed on Apr. 17, 2007, paragraph 11, which are incorporated herein by reference.

16. Claims 54, 55, and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 7-128890 (JP'890), as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa. See the DERWENT machine-assisted translations of JP'890 and JP'250 for cites.

JP'890 discloses an electrophotographic photoreceptor comprising a conductive aluminum drum, an intermediate layer, a charge generation layer, and a charge transport layer. The intermediate layer has a thickness of 0.1 μm , which meets the layer thickness of "up to 10 μm , excluding 0" recited in instant claim 80. The charge generation layer comprises 2.5 parts by

weight of an X-form metal-free phthalocyanine pigment and 3 parts by weight of the asymmetric bisazo pigment (I-30). Translation, Table 1-(7) at page 20, compound (I)-30; paragraphs 0035, 0036, 0042, and 0043; and example 10 in paragraph 0047. (Note that the DERWENT translation paragraph 0042 incorrectly states that "3.0 weight parts and 2.5 weight-parts of X type metal-less phthalocyanines were added for the illustration compound (1)-24 disazo pigment." Paragraph 0042 in JP'890 states that 3.0 weight parts of the compound (1)-24 and 2.5 weight parts of X type metal-less phthalocyanine are used to form the charge generation layer.) The weight ratio of phthalocyanine pigment to bisazo pigment is 2.5:3, which is within the range of 1:5 to 5:1 recited in instant claim 54. JP'890 also discloses that the asymmetric bisazo pigment can equally be any of the asymmetric bisazo pigments shown in Tables 1-(1) to 1-(11), such as formula (I)-8 in Table 1-(2) at page 15, which meets the limitations of formulas (II), (C1), and (C2) recited in instant claim 54, where (C1) and (C2) are represented by the chemical formulas C2-15, where R is 3-methoxyphenyl, and C2-11, where R is 2-methylphenyl, respectively, in the (C2) table recited in instant claim 54. See the translation, paragraph 0014. According to JP'890, its

photoreceptor has high spectral sensitivity in the visible light to the near infrared region. Translation, paragraph 0004.

JP'890 does not exemplify a photoreceptor comprising an intermediate layer comprising titanium oxide as recited in the instant claims. However, JP'890 discloses that a fine-powder pigment of a metallic oxide, such as titanium oxide, may be added to the binder resin of its intermediate layer to prevent the occurrence of moire and to reduce the residual electric potential of the photoreceptor. Translation, paragraph 0030. These are the same benefits sought by applicants. See the instant specification, page 31, lines 9-11.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of JP'890, to use the asymmetric bisazo pigment (I)-8 as the asymmetric bisazo pigment in the charge generation layer and to add the metal pigment titanium oxide to the intermediate layer in the photoreceptor disclosed by JP'890. That person would have had a reasonable expectation of successfully obtaining an electrophotographic photoreceptor that has high spectral sensitivity in the visible light to the near infrared region and that prevents the occurrence of moire and exhibits a reduction in residual electric potential.

JP'890 does not disclose that the charge transport layer comprises a sulfur-containing compound as recited in the instant claims.

JP'250 discloses sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), and (S-3) recited in the instant claims. JP'250 discloses that said sulfur-containing compounds can be used as antioxidants in charge transport layers of photoreceptors. The discussion of JP'250 in paragraph 11, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to use JP'250's sulfur-containing compounds that meet the compositional limitations of formulas (III), (S-1), (S-2), or (S-3) recited in the instant claims in an amount of 1.5 parts by weight per 100 parts by weight of the charge transport material, as an antioxidant in the charge transport layer in the photoreceptor rendered obvious over the teachings of JP'890. That person would have had a reasonable expectation of successfully obtaining a photoreceptor that has improved potential stability over long periods of time and that provides stable toner images after many repeated copies.

The recitation, "the photoreceptor is suitable for a reverse developing method in an electrophotographic image

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forming apparatus which comprises a contact charger," in claim 54 is merely a statement of intended use that does not distinguish the photoreceptor rendered obvious over the combined teachings of the cited prior art. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. It is well known in the electrophotographic arts that that the "production of positive prints from line negatives requires only a change of the xerographic developing material." The discussions of Schaffert and Tanigawa in paragraph 11 above are incorporated herein by reference. As discussed above, the photoreceptor rendered obvious over the combined teachings of the cited prior art meets the photoreceptor limitations recited in the instant claims. Thus, on the present record, the intended use recited in instant claim 54 does not appear to result in a compositional or structural difference between the photoreceptor recited in the instant claims and the photoreceptor rendered obvious over the combined teachings of the cited prior art.

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17. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 54 above, further combined with additional teachings in JP'890. See the DERWENT translations of JP'890 and JP'250 for cites.

The claim is rejected for the reasons discussed in the office action mailed on Apr. 17, 2007, paragraph 13, which are incorporated herein by reference.

18. Claims 58-60, 63, 64, 67, 68, and 81-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claims 54 and 55 above, further combined with Kanoto. See the DERWENT translations of JP'890 and JP'250 for cites.

JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa renders obvious an electrophotographic photoreceptor as described in paragraph 16 above, which is incorporated herein by reference.

JP'890 does not disclose that the electrophotographic photoreceptor can be used in a process cartridge or in an apparatus as recited in the instant claims. Nor does JP'890

disclose that its photoreceptor can be used in the image forming method recited in the instant claims.

However, the use of process cartridges in electrophotographic apparatuses is well known in the art. Kanoto discloses an image forming apparatus comprising a readily detachable process cartridge. The apparatus and process cartridge meet the structural limitations recited in instant claims 58, 59, 63, 81, and 82 but for the particular photoreceptor. Kanoto further discloses that its imaging apparatus performs an image forming process that meets the process steps recited in instant claims 67 and 83, but for the step of providing the particular photoreceptor. The discussion of Kanoto in paragraph 13, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kanoto, to incorporate the electrophotographic photoreceptor rendered obvious over the combined teachings of JP'890, JP'250, Schaffert, and Tanigawa in Kanoto's detachable process cartridge in its image forming apparatus. That person would have had reasonable expectation of successfully obtaining a reversal development imaging method and an image forming apparatus comprising an easily detachable process cartridge having the

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benefits of being small and free from maintenance, each of which provides stable toner images after many repeated runs as disclosed by JP'250.

19. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, and Tanigawa, as applied to claim 55 above, further combined with US 3,357,989 (Byrne). See the DERWENT translations of JP'890 and JP'250 for cites.

The claim is rejected for the reasons discussed in the office action mailed on Apt. 17, 2007, paragraph 15, which are incorporated herein by reference.

20. Claims 62, 66, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP'890, as evidenced by applicants' admission I, combined with JP'250, Schaffert, Tanigawa, and Kanoto, as applied to claims 60, 64, and 68 above, further combined with Byrne. See the DERWENT machine-assisted translations of JP'890 and JP'250 for cites.

The claims are rejected for the reasons discussed in the office action mailed on Apt. 17, 2007, paragraph 16, which are incorporated herein by reference.

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21. Applicant's arguments filed on Jul. 13, 2007, as applicable to the rejections over JP'998 and the rejections over JP'890, set forth in paragraphs 11-20 above have been fully considered but they are not persuasive.

Applicants assert that none of the cited references discloses or suggests a compound of formula (II) in which Cp₁ and Cp₂ are selected from the formulas (C1) to (C8) as recited in the instant claims.

Applicants' assertion is not persuasive. For the reasons discussed in the rejections in paragraphs 11 and 16 above, JP'998 and JP'890 both teach the bisazo pigment of formula (I)-8 that meets the compositional limitations of formula (II) recited in the instant claims. The instant claims do not exclude the prior art bisazo pigment (I)-8 that comprises the R groups C2-15 and C2-11, 3-methoxyphenyl and 2-methylphenyl, respectively, recited in the (C2) table in the instant claims.

Accordingly, the rejections in paragraphs 11-20 stand.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Jul. 27, 2007